Proposal Reviews

#222: Cosumnes River Preserve Perennial Pepperweed Control Project

US Bureau of Land Management

Initial Selection Panel Review	
Research and Restoration Technical Panel Review	
Delta Regional Review	
External Scientific Review	#1 #2 #3 #4 #5
Environmental Compliance	
Budget	

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP
Initial Selection Panel Review

Proposal Number: 222

Applicant Organization: US Bureau of Land Management

Proposal Title: Cosumnes River Preserve Perennial Pepperweed Control Project

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

Consider as Directed Action in Annual Workplan (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)
Not Recommended (a proposal not currently recommended for funding-after revision may be considered in the future)

Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	**-**
In Part	**-**
With Conditions	**-**
Consider as Directed Action	**X**
Not Recommended	**-**

Amount: **$141,500.00**

Conditions, if any, of approval (if there are no conditions, please put "None"):

None.

Provide a brief explanation of your rating:

The Selection Panel recognizes the importance of invasive weed management to ecosystem restoration and the collaborative effort evident in the project proposal. The Panel also supports the approach described in the proposal. However, the Panel is requiring that all weed management projects include strong experimental, monitoring and adaptive management components. Information to be gained from these components should include comparisons of the effectiveness of different weed management tactics, the integration with restoration of native plants, and monitoring of results over the long term. Therefore, the Panel recommends that the proponent revise and resubmit the proposal for consideration as a directed action with the above-recommended elements.

Research and Restoration Technical Panel Review:

CALFED Bay-Delta 2002 ERP PSP
Research and Restoration Technical Panel Review Form

Proposal Number: 222

Applicant Organization: US Bureau of Land Management

Proposal Title: Cosumnes River Preserve Perennial Pepperweed Control Project

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;
Above Average: Quality proposal, medium or high regional value, and no significant administrative concerns;
Adequate: No serious deficiencies, no significant regional impediments, and no significant administrative concerns;
Not Recommended: Serious deficiencies, significant regional impediments or significant administrative concerns.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	**A good proposal which is very cost effective and will provide additional confirmation with prpperweed control methods. "Solid, well designed applied research project". Everything related to the proposal was excellent and the panel recommends funding, however, one item was pointed out by a reviewer a multi-tactic, non-herbicide management approach that explicitly recognizes that the invasive non-native plants will continue to inhabit the environment would be more sustainable. The panel suggests that the PI also explore non-herbicide management options and their integration.**
XAbove average	
-Adequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

   A. Yes and No - poor to excellent, average is good, "goals, objectives, and hypotheses are clearly stated and consistent". B. Yes and No - poor to excellent, "the goals are timely in that pepperweed is a weed of growing concern and the goals and hypotheses, although of very applied nature, are very clearly stated", "does not discuss how the changed conditions will be preserved and improved ", "as afield trial, this project makes sense", "it not explained how this concept differs from past concepts"

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

A. Yes and No, poor to excellent, overall good, "should consider greater encouragement of the natives, such as reseeding or very localized application of herbicide", "likely to succeed", "will qualified to complete the work" B. Yes and No, "Quantifiable criteria for weed control success and monitoring after eradication seems sufficient to provide information on native vegetation response", "No"

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

   A. Yes and No B. Yes and No C. Yes and No, overall most reviewers like it and felt the project would produce good products, "will provide an excellent test of control efforts for perennial pepperweed that could be applied elsewhere", "generally applicable to other areas", "proposal does not explain the kinds of data to be collected other than cover of the target species or how it will be used".

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   A. Yes, "a lot of work done for the money".

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

   Delta - high - "this is action oriented work to restore a key habitat area. It will also improve the understanding of pepperweed control", "complements the existing weed management of the preserve and ongoing restoration".

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

   OK except for, compliance checklist is wrong, no money allocated for expansion of the NEPA document or amending the PUP.

Miscellaneous comments:

None

Delta Regional Review:

Proposal Number: 222

Proposal Title: Cosumnes River Preserve Perennial Pepperweed Control Project

Overall Ranking: **-**Low **-**Medium **X**High

Provide a brief summary explanation of the committee's ranking:

This is action-oriented work to restore a key habitat area. It will also improve understanding of pepperweed control.

1. Is the project feasible based on local constraints?

   XYes **-**No

   How?

   principal currently is the land manager of the preserve area

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

   XYes **-**No

   How?

   goals 4 (Restore at-risk species' habitat;improve knowledge of optimal strategies for these species) and 5 (control NIS).

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

   XYes **-**No

   How?

   complements the existing weed management of the preserve and ongoing restoration activities

4. Does the project adequately involve local people and institutions?

   XYes **-**No

   How?

   coordinated with all of the land owners asssociated with the preserve

share information with Sacramento Weed Abatemetn Team and County

Other Comments:

could coordinate/link to the USDA efforts as well

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **222**

Applicant Organization: **US Bureau of Land Management**

Proposal Title: **Cosumnes River Preserve Perennial Pepperweed Control Project**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
-Excellent	**I believe that the exotic control portion deserves an excellent rating. My only reservation has to do with the characterization of the post-removal plant community. I encourage the authors, if funded, to more explicitly consider the success of native species during and after the herbicide/mowing treatments.**
XGood	
-Poor	

1. **<u>Goals.</u>** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   Yes, the goals, objectives, and hypotheses are clearly stated and consistent. Removal of perennial pepperweed is a very important goal in natural areas such as the Consumnes River Preserve. The authors' objective to reduce the cover of the exotic is more clearly stated than the follow-up management of native species cover. It appears that the monitoring will more effectively document the effect of the treatments on perennial pepperweed than the assessment of future approaches to reestablish natives (Objective #2, p. 2). That being said, the control of the exotic is a worthy goal and the authors acknowledge that complete recovery of native vegetation will likely not happen within the three-year time frame of the proposal schedule.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   The justification of the control methodology was very complete. The theoretical and experimental work by Renz and DiTomasso established guidelines for the use of mowing and herbicide in combination to control pepperweed. The authors assert that control methods have been successfully conducted on smaller scales at the Preserve, and at nearby natural areas. The expectation that native species cover will increase following herbicide and mowing was not as well justified. I think it is almost certain that the herbicide will affect non-target native species just as heavily as the exotic pepperweed, and that native cover will almost certainly decline, at least in the short term. While pepperweed may be effectively controlled, the new bare area could simply become an opening for other exotic species. More justification for the expectation that native species will benefit would be helpful. The scale of herbicide application may be small enough to limit non-target mortality.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   The application of herbicide and mowing techniques to reduce pepperweed are well-designed, and likely to be successful. The authors also do a good job of recognizing the need for post-management monitoring of the control methods, and in recognizing that a second year of treatment may be required. This monitoring should aid future control efforts. If increasing native cover is a key objective of the proposal (as opposed to exotic removal and post-treatment monitoring), then the authors should consider greater encouragement of the natives, such as reseeding or very localized application of herbicide. There are no such details in the proposal, however. Alternatively, the authors could have provided more detail as to how they will develop more effective strategies to favor natives should monitoring suggest that native cover has declined.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   The control of perennial pepperweed is documented and likely to succeed. Furthermore, the goals of the project are to try to control the exotic, plus monitoring of success and vegetation cover to design future management. The project is consistent with these objectives.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   The details of the monitoring plans are fair. The authors assert that further mapping must be completed before more detailed plans are proposed, and this seems reasonable. The details provided so far appear to be adequate in terms of the establishment of management plots. The quantitative sampling of the vegetation (e.g. species richness, % cover, etc.) was not described.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

The project will provide an excellent test of control efforts for perennial pepperweed that could be applied elsewhere. It is not known the extent to which conclusions as to the effects on native vegetation could be generalized to other sites. This project may also provide information as to the need for native revegetation following exotic removal.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   The authors appear to be well-qualified to complete the work.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   The budget appears reasonable for the amount of work that the authors are proposing.

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **222**

Applicant Organization: **US Bureau of Land Management**

Proposal Title: **Cosumnes River Preserve Perennial Pepperweed Control Project**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;
Good: quality but some deficiencies;
Poor: serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**This project will provide additional confermation with pepperweed control mentods and control pepperweed in a sensitive area.**
-Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   Excellent yes, yes.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   Excellent yes, yes, yes.

This project will evaluate and determine the best pepperweed control methods.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   Excellent yes, yes, yes, yes.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   Excellent yes, excellent, yes.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   Very good yes, yes.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

   Very good yes, yes, yes.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   Excellent good, yes, yes.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   Excellent yes.

   A lot of work done for the money.

Miscellaneous comments:

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: **222**

Applicant Organization: **US Bureau of Land Management**

Proposal Title: **Cosumnes River Preserve Perennial Pepperweed Control Project**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;
Good: quality but some deficiencies;
Poor: serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
-Excellent	**Proposed project is important and timely, and there is a high probability of success.**
XGood	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   This section relies heavily on vague, unclear language. For example, "ecosystem health" is a non-concept--I suspect the authors mean "proportion of native plants" or some other quantifiable term. Also, predictions are termed "hypotheses." However, the proposed project is timely and important.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

The study is adequately justified, and a conceptual model is proposed and explained. Again, the term "ecosystem health" interferes with clarity of presentation.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   Methods for initial recon are not described in adequate detail. Results are unlike to add to the base of knowledge, and the project likely will not generate novel information, methods, or approaches. Nonetheless, the project probably will be successful in controlling pepperweed, and therefore the information will be useful to decision-makers.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   The approach is fully documented and technically feasible. The likelihood of success is high, and the scale of the project is consistent with objectives.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   Methods associated with "hypothesis 2" are vague--"methods and objectives will be finalized afer mapping ..."

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

   The project likely will produce several reports for newsletters, and therefore will be useful for end-users and decision-makers. The monitoring component probably will not produce new products, and interpretative outcomes are unlikely.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   The team appears quite capable of successfully implementing the project. Infrastructure is adequate.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   Budget is reasonable and adequate.

Miscellaneous comments:

External Scientific: #4

Research and Restoration External Scientific Review Form

Proposal Number: **222**

Applicant Organization: **US Bureau of Land Management**

Proposal Title: **Cosumnes River Preserve Perennial Pepperweed Control Project**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

None

Review:

Please provide an overall evaluation summary rating:

<u>Excellent:</u> outstanding in all respects;
<u>Good:</u> quality but some deficiencies;
<u>Poor:</u> serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
XExcellent	**Solid, well designed applied research project that should provide very useful information on the control of pepperweed and the response of native vegetation following pepperweed eradication.**
-Good	
-Poor	

1. **<u>Goals.</u>** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   2 - Very Good The goals are timely in that pepperweed is a weed of growing concern and the goals and hypotheses, although of a very applied nature, are very clearly stated.

2. **<u>Justification.</u>** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   2 - Very Good The hypotheses being tested are very applied and focused in nature but it seems likely that because the project is carefully designed, results should have wider application.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   2 - Very Good Clear hypotheses and well planned design that has a solid statistical base and builds upon earlier observational studies.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   2 - Very Good

   Straightforward design should not present any significant logistical difficulties in implementation and the weed control technology is tested and proven

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   2 - Very Good Quantifiable criteria for weed control success and monitoring after eradication seems sufficient to provide information on native vegetation response.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

   3 - Good It would seem that the experience gained in this project would be generally applicable to other areas and the applicants mention that results would be disseminated to the appropriate channels.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   2 - Very Good Personnel seem fully competent to execute the experiment and train the interns involved in data collection.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

   2- Very Good Seems very reasonable.

Miscellaneous comments:

External Scientific: #5

Research and Restoration External Scientific Review Form

Proposal Number: **222**

Applicant Organization: **US Bureau of Land Management**

Proposal Title: **Cosumnes River Preserve Perennial Pepperweed Control Project**

Conflict of Interest Statements:
I have no financial interest in this proposal.
XCorrect
-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;
Good: quality but some deficiencies;
Poor: serious deficiencies.

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
-Excellent	**This project promises either too much for too little or too little for too much.**
-Good	
XPoor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

   a. Are the goals, objectives and hypotheses clearly stated and internally consistent?

   1) Goals and Objectives: While the goal of improving ecosystem health by killing pepperweed is laudable, clear, and sensible, the project does not discuss how the changed conditions will be preserved and improved beyond a general statement about re-colonization by native species. No discussion of any reliable means for preventing re-invasion is given beyond a single additional treatment. 2) Hypotheses: The proposal leaves the general impression that mowing and the application of herbicides will kill some, but not necessarily all, of the existing pepperweed plants in one or two treatments, but that the investigators are not sure. Replication should be considered only if previous studies need further confirmation and if the proposal authors are committed to publishing study results in a peer-reviewed scientific journal. If replication is not needed on that basis, and if no specific results are

anticipated, monitoring should be simplified to match the applied requirements and the applied program strengthened.

b. Is the concept timely and important?

It is apparent that the sooner pepperweed is eradicated the sooner its adverse effects upon indigenous ecosystems will be eliminated, permitting those systems to recover. While the concept is timely in the sense that further delays are more likely that not to result in some degree of worsening of the problem, and some action toward a solution has undoubted importance given the broader goal of ecosystem health improvement, it is difficult to determine from the proposal just how important this particular project is. Relevant issues will be discussed in the remainder of the review.

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   a. Is the study justified relative to existing knowledge?

   As a field trial, this project makes sense because it has been established that weeds can be poisoned, and it is always interesting to see how long such treatment(s) will remain effective. However, no outline or brief summary of existing knowledge is presented and no specific goals regarding new knowledge are stated. For example, there is no suggestion of any investigation that would explain why some plants are killed and some are not, or how what might be learned from the evidence that is different from similar investigations.

   b. Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work?

   It is clear that the project is designed to kill pepperweed plants with herbicides and that the investigators plan to measure the results. It is not explained how this concept differs from past concepts.

   c. Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

   Killing pepperweed plants is well justified, and there is little doubt that this project will accomplish that to some degree. The proposed project does not seem to fit any of the above categories, but seems to demonstrate what has either already been demonstrated or can be reasonably determined from past experience.

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

   a. Is the approach well designed and appropriate for meeting the objectives of the project?

   The approach is more or less straightforward, but its objectives may be too limited to be of great value in the long run.

b. Are results likely to add to the base of knowledge?

Presumably something is always learned from every experience, but it is difficult to determine just how much potential there is in this project for adding significantly to existing knowledge.

c. Is the project likely to generate novel information, methodology or approaches?

Any effort of this kind always has the potential for revealing information that can be synthesized into novelty by a prepared mind, so the answer to this question can only be determined by the quality of insight possessed by the people performing the work. However, there is nothing in this proposal that indicates anything specific in that regard.

d. Will the information ultimately be useful to decision-makers?

No doubt some information will have some utility, perhaps even added utility, but the proposal content does not suggest anything specific.

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

   a. Is the approach fully documented and technically feasible?

   There is so little documentation that it is not possible to determine technical feasibility beyond general interpretation.

   b. What is the likelihood of success?

   The proposal indicates that 50% and 90% decreases in plant cover are expected. The basis for those numbers is not explained. Are they arbitrarily determined? In some places in the proposal the term control is used, which to this reviewer implies that a certain (remaining?) level of infestation will be maintained. However, there is no discussion of recruitment level estimates or how the level of control achieved will be maintained. The reviewer is left to speculate regarding the usefulness and cost-effectiveness of such an approach and whether or not recruitment will proceed to re-infest treated areas following the project.

   c. Is the scale of the project consistent with the objectives?

   The scale is limited by the objectives; therefore, in the literal sense, it can, or must, be said that it is.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

   a. Does the project include appropriate performance measures to measure success relative to the project's goals and objectives?

   Yes, the proposal mentions such measures, but beyond setting 50% and 90% cover reduction as goals, it only promises to determine actual methodologies. In itself, this may be sufficient, but it would seem that a proposal should include some discussion of specific alternatives, including plans for developing new and novel approaches.

b. Is there enough detail as to how the performance measures will be quantified?

Not beyond those just mentioned.

c. For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

No.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

   a. Are products of value likely from the project?

   Some pepperweed plants (and perhaps some undefined congeners) will be killed. There will survey data produced, and having a map of infestation locations will be a useful management and evaluation tool in the future. However, the proposal does not explain the kinds of data to be collected other than cover of the target species or how it will be used.

   b. Specifically for restoration projects, are products of value also likely from the monitoring component?

   All such information is of potential value to restoration projects, but the products as described may not have significant value over existing knowledge.

   c. Are interpretative outcomes likely from the project?

   The public can be shown the results.

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   a. What is the track record of applicants in terms of past projects?

   The applicant has extensive experience.

   b. Is the project team qualified to efficiently and effectively implement the proposed project?

   The teams qualifications appear to be adequate or more than adequate for such a task, but no evidence was presented to give any indication of how efficient the management is. One must presume that they would be reasonably efficient in the absence of hard evidence to the contrary.

   c. Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

   Yes.

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

Is the budget reasonable and adequate for the work proposed?

Work items are not itemized, but assuming an average of 50 acres of treated plots the average cost for monitoring is about $1,000 per acre and herbicide mowing and spraying is about $1,200 per acre. The description of the specific tasks is insufficient for a reasonable analysis of cost-benefit for monitoring and oversight, but while it is perhaps somewhat above the average for a reasonably detailed survey program as might be performed on an above-average restoration project, calling it excessive cannot be firmly justified on that basis. It might be assumed that a materials cost of $200 per acre is reasonable, but the specific nature of the materials is not described.

<u>Miscellaneous comments:</u>

This proposal is not without merit, but neither does it, for the most part, provide sufficient information upon which to base solid positive answers to some of the review questions.

Existing conditions are not described, and attempts at speculation range from substantially alien plant cover to sufficient indigenous plant populations to make natural regeneration upon killing of the pepperweed (and presumably both alien and indigenous congeners) at least thinkable. Contradictions can easily be imagined, but such speculation does not constitute a basis for a responsible review. Too much is left to the imaginationthe proposal lacks sufficient detail for any such basis.

If the long-term view is held most importantecosystem healththis reviewers criticism is that this project is not big enough and not ambitious enough. Granted, the proposal is perhaps necessarily limited by available funds, but the ultimate question can be reduced to the principle of optimal allocation of scarce resources.

This project appears to be an attempt at compromise in an atmosphere of hard realities. But there may be more than one way to compromise. A project that was smaller in physical scale (why four to six ten-acre plots?) and deeper in its scientific commitment (e.g., examining dispersal mechanisms, reproductive biology/physiology, studying nearby sites with apparent resistance to invasion, and the like) and more persistent in its duration (ensuring continuing management for a sufficiently long period to ensure the establishment of a healthy ecosystem resistant to re-invasion and including a restoration program to achieve dynamic stability). Granted, there is the danger that some reviewers might criticize a project lacking the possible economies of scale of ten-acre plots. Such criticism could be countered by a statement that it would make more sense to fully eradicate, restore, and manage such a site than to provide temporary gratification on a larger scale that would then run a serious risk of re-invasion, leaving the site ultimately not better off for the investment.

If any alien plant management project cannot promise permanence or a sound theoretical basis for research that may lead to a self-sustainable ecosystem resistant (perhaps with many years of oversight management committed to timely eradication of small populations resulting from re-invasion) to invasion, what should it promise?

This proposal needs to be either more ambitious in a qualitative sense or in a quantitative sense. But in either case, there should be at least a theoretically sound foundation for presuming that the results will pay off, either in useful knowledge that will be transferable to large-scale eradication, restoration and management projects that can be justified by the knowledge so gained or in such large-scale projects that are supported by present knowledge gained elsewhere. This reviewer rarely offers an opinionbut: This project appears to attempt the impossibleto be all

things to all stakeholders. If the authors have successfully performed similar projects before, I honor them and will gratefully substitute their judgment for mine. If a project of this scale is needed, this reviewer strongly suggests an invigorated scientific component (integrated ecological research, not just field trials) and a greatly expanded scope of management intensity and duration including a restoration program committed to a self-sustaining ecosystem with correspondingly much greater funding to fully support a program that will not abandon the central objective without scientific evidence that the restored ecosystem will permanently persist without intervention.

Environmental Compliance:

Proposal Number: 222

Applicant Organization: US Bureau of Land Management

Proposal Title: Cosumnes River Preserve Perennial Pepperweed Control Project

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

   XYes **-**No

   If no, please explain:

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

   -Yes **X**No

   If no, please explain:

   I don't think any money was allocated for expansion of the NEPA document or amending the PUP.

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

   -Yes **X**No

   If yes, please explain:

Other Comments:

The Compliance Checklist is wrong but in the Comment section the applicant states what permits and documents are actually required and that the checklist could not be updated.

Budget:

Proposal Number: 222

Applicant Organization: US Bureau of Land Management

Proposal Title: Cosumnes River Preserve Perennial Pepperweed Control Project

1. Does the proposal include a detailed budget for each year of requested support?

   XYes **-**No

   If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

   XYes **-**No

   If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

   XYes **-**No

   If no, please explain:

4. Are appropriate project management costs clearly identified?

   XYes **-**No

   If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

   XYes **-**No

   If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

6. Does the budget justification adequately explain major expenses?

   XYes **-**No

   If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes **X**No

If yes, please explain:

Other Comments: